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Engineering Department

INTERDEPARTMENTAL COMMUNICATION

To: **Board of Selectmen** ***Date:*** December 3, 2013

From: **Engineering Department**

Subject: ***100 Discovery Way – Proposed Building Addition – SPSP #446***

We have reviewed the plans titled "Site Development Plans for Building Addition, 100 Discovery Way, Acton MA 01720" dated November 7th, 2013 for the above mentioned site plan special permit and have the following comments:

1. No earth removal or water balance calculations have been provided with the application

2. The site is located in Zones 3 and 4 of the Groundwater Protection Overlay district. The proposed drainage system recharges to groundwater in Zone 4 but outlets to Zone 3 and according the Acton Bylaw: "*where a lot is partly in Zone 4 and party in another zone of the groundwater protection district, impervious cover runoff, generated in the Zone 4 portion of the lot but…discharged from the lot, in a Zone 1, 2 or 3 portion of the lot, shall meet the same quality standard at the point of…discharge as if the runoff had been generated in Zones 1, 2 or 3*". The proposed drainage system doesn't meet the following standards of the Groundwater Protection Zone 3:

    a. The first inch of every storm event shall be directed into vegetated clay-lined retention ponds, retained for at least 3 days and exposed to sunlight. (Section 4.3.6.3 of the Acton Zoning Bylaw)

    b. Drainage facilities designed to prevent leaks and equipped with emergency slide gates or similar provisions in the event of an emergency (Section 4.3.6.4 of the Acton Zoning Bylaw)

3. The drainage calculations used storm intensity values from a Cornell study. Typically systems are designed using values found in TP-40. The values are larger in the Cornell study than the TP-40 study and smaller in others. The MassDEP Hydrology Handbook states "*…MA DEP requires the use of TP-40 rainfall data for calculations….More stringent design storms may be used under a local bylaw or ordinance*". Acton has no local bylaw or ordinance requiring more stringent values, therefore we recommend the system be designed using TP-40 values.

4. The hydrocad calculations model the existing onsite flow towards the catch basin as two watersheds, one being entirely pervious and the other entirely impervious. The onsite flow is one watershed made up of impervious and pervious area. Modeling them separately in hydrocad affects the peak rate of runoff. The watershed should be modeled as one watershed with a composite curve number and time of concentration.

5. The drain manhole should have shaped inverts.

6. The plans are referenced to the 1988 NAVD datum. Plans are required to be referenced to the 1929 NGVD datum.

7. The applicant should have two temporary benchmarks, in addition from the starting benchmark, that won't be disturbed during construction shown on the plan.

8. The applicant should add a note forbidding the use of fill containing hazardous fill and requiring the hauling of earth to and from the site to the hours between 9 a.m. and 4 p.m.

9. The applicant will be required to provide an as-built plan certified by a PE/PLS showing compliance with the approved plan and design.